CLAIMS:

1. A system for monitoring a temperature condition, comprising:

a fiber optic cable;

a light emitting device coupled to said fiber optic cable and configured to input a light

pulse into said fiber optic cable;

an optical receiver coupled to said fiber optic cable and configured to receive a

reflection signal that arises from said input light pulse in said fiber optic cable; and

a processor configured to determine a temperature condition along the fiber optic

cable and a location of the temperature condition along the fiber optic cable based on said

reflection signal.

2. The system of claim 1, wherein said processor is configured to determine said

temperature condition and location based on an amplitude and return time of said return

signal.

3. The system of claim 1, wherein said processor is configured to determine said

temperature condition based on at least one of a threshold value and a comparison signal.

4. The system of claim 3, wherein said processor is configured to adjust at least one

of said threshold value and comparison signal to detect different temperature conditions.

5. The system of claim 1, wherein said processor is configured to determine different

portions of the fiber optic cable based on different return times of said reflection signal.

6. The system of claim 5, wherein said processor is configured to determine said

temperature condition in each of said different portions of the fiber optic cable based on at

least one of a threshold value and comparison signal corresponding to each of said different

portions of the fiber optic cable.

7. The system of claim 6, wherein said processor is configured to adjust each of said corresponding at least one of said threshold value and comparison signal to detect different temperature conditions among said different portions of the fiber optic cable.

8. The system of claim 1, wherein said processor is configured to determine said location by determining at least one of a location relative to an overall length of the fiber optic cable, and an absolute distance from one end of the fiber optic cable.

9. The system of claim 1, wherein said processor is configured to determine at least one of a temperature duration and a temperature progression over a predetermined time interval.

10. The system of claim 1, further comprising a signal generator configured to initiate at least one of an alarm, a safety measure and a corrective measure.

11. A system for monitoring a temperature condition, comprising:

a fiber optic cable;

means for inputting a light pulse into said fiber optic cable;

means for receiving a reflection signal that arises from said input light pulse in said fiber optic cable; and

means for determining a temperature condition along the fiber optic cable and a location of the temperature condition along the fiber optic cable based on said reflection signal.

12. The system of claim 11, further comprising means for determining said temperature condition and location based on an amplitude and return time of said return signal.

13. The system of claim 11, further comprising means for determining said temperature condition based on at least one of a threshold value and a comparison signal.

14. The system of claim 13, further comprising means for adjusting at least one of said threshold value and comparison signal to detect different temperature conditions.

15. The system of claim 11, further comprising means for determining different portions of the fiber optic cable based on different return times of said reflection signal.

16. The system of claim 15, further comprising means for determining said temperature condition in each of said different portions of the fiber optic cable based on at least one of a threshold value and comparison signal corresponding to each of said different portions of the fiber optic cable.

17. The system of claim 16, further comprising means for adjusting each of said corresponding at least one of said threshold value and comparison signal to detect different temperature conditions among said different portions of the fiber optic cable.

18. The system of claim 11, further comprising means for determining said location by determining at least one of a location relative to an overall length of the fiber optic cable, and an absolute distance from one end of the fiber optic cable.

19. The system of claim 11, further comprising means for determining at least one of a temperature duration and a temperature progression over a predetermined time interval.

20. The system of claim 11, further comprising means for generating a signal to initiate at least one of an alarm, a safety measure and a corrective measure.

21. A computer readable medium containing program instructions for execution on a computer controlled system for monitoring a temperature condition, which when executed by the system, cause the system to perform the following steps:

input a light pulse into a fiber optic cable of the system;

receive a reflection signal that arises from said input light pulse in said fiber optic cable; and

determine a temperature condition along the fiber optic cable and a location of the temperature condition along the fiber optic cable based on said reflection signal.

22. The computer readable medium of claim 21, wherein said program instructions further cause said system to determine said temperature condition and location based on an amplitude and return time of said return signal.

23. The computer readable medium of claim 21, wherein said program instructions further cause said system to determine said temperature condition based on at least one of a threshold value and a comparison signal.

24. The computer readable medium of claim 23, wherein said program instructions further cause said system to adjust at least one of said threshold value and comparison signal to detect different temperature conditions in said fiber optic cable.

25. The computer readable medium of claim 21, wherein said program instructions further cause said system to determine different portions of the fiber optic cable based on different return times of said reflection signal.

26. The computer readable medium of claim 25, wherein said program instructions further cause said system to determine said temperature condition in each of said different portions of the fiber optic cable based on at least one of a threshold value and comparison signal corresponding to each of said different portions of the fiber optic cable.

27. The computer readable medium of claim 26, wherein said program instructions further cause said system to adjust each of said corresponding at least one of said threshold value and comparison signal to detect different temperature conditions among said different portions of the fiber optic cable.

28. The computer readable medium of claim 21, wherein said program instructions further cause said system to determine said location by determining at least one of a location

relative to an overall length of the fiber optic cable, and an absolute distance from one end of the fiber optic cable.

29. The computer readable medium of claim 21, wherein said program instructions further cause said system to determine at least one of a temperature duration and a temperature progression of said temperature condition over a predetermined time interval.

30. The computer readable medium of claim 21, wherein said program instructions further cause said system to generate a signal to initiate at least one of an alarm, a safety measure and a corrective measure.